MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1 2022/2023 (TERM ID 2210)

BBF3124 – FINANCIAL DERIVATIVES

(All Sections/Groups)

16 FEBRUARY 2023
2.30 p.m. – 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 4 pages with 4 Questions
2. Attempt all **FOUR** questions. The distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

QUESTION 1

(a) "Since trading in derivatives is a zero-sum game, society has no benefits from such trading." Do you agree with the statement above? Evaluate the statement.

(3 marks)

(b) Distinguish between over-the-counter (OTC) contracts and exchange traded contracts.

(4 marks)

(c) Mr. Trenor believed that a bullish trend is on its way, thus he decided to purchase 4 June FTSE Bursa Malaysia KLCI Futures (FKLI) at 1525 and holds the position for the next five days. The initial margin for the trade is 20% and maintenance margin is 80% of the initial margin. Below is the expected settlement price.

Day	Settlement Price
0	1525
1	1500
2	1425
3	1475
4	1500
5	1550

(i) Prepare the mark to market table by showing Mr. Trenor's account balance. Is there any margin call? If yes, on which day?

(17 marks)

(ii) What is the net profit/loss from the trade?

(1 marks)

(Total: 25 marks)

Continued ...

QUESTION 2

(a) As a fund manager, you have had tough time this year. Market conditions have been difficult, and you have been looking for arbitrage opportunities besides stock-picking. The S&P Global Malaysia Manufacturing PMI declined to 48.7 in October of 2022 from 49.1 in the previous month due to sluggish global market conditions and muted customer demand. You believe that this might create some opportunities for arbitrageurs. The following information is obtained from the spot market.

90 days KLIBOR = 6.25%
180 days KLIBOR = 7.85%

The 3-month KLIBOR futures is priced at 92.00

(i) Compute the correct price. Is there an arbitrage opportunity?

(7 marks)

(ii) Construct the most appropriate strategy

(3 marks)

(b) Mr. Nigel works at the arbitrage desk of a hedge fund company. He observed the following quotes:

Telekom Malaysia Bhd: RM 5.35
Telekom Malaysia Bhd. 3-month SSF: RM 5.53
3-month KLIBOR: 3% p.a.
SSF Contract Size: 100,000 shares

Assumed that dividend is not expected in the next 3-month as Telekom Malaysia Bhd just went ex-dividend. Based on the above information:

(i) Evaluate the possibility of any arbitrage opportunity. Outline the suitable strategy and named the strategy.

(5 marks)

(ii) Estimate the net profit/loss by assuming that 400,000 shares will be placed. Assuming Telekom Malaysia Bhd. is at RM 6.20 in 90 days.

(10 marks)

(Total: 25 marks)

Continued ...

QUESTION 3

In these times of uncertainty, you, as a professional trader, has been tasked with proposing the best strategy to earn unlimited profit and limited loss. You have formed a portfolio of stocks when the FBM KLCI stood at 1,500 points on September 1, 2022. The following quotes for FTSE Bursa Malaysia KLCI Futures (FKLI) are available.

October 1,300 points FBM KLCI call options @ 60 points

October 1,500 points FBM KLCI call options @ 50 points

October 1,800 points FBM KLCI call options @ 40 points

October 1,300 points FBM KLCI put options @ 30 points

October 1,500 points FBM KLCI put options @ 50 points

October 1,800 points FBM KLCI put options @ 60 points

(a) Construct and name the strategy that you propose. Illustrate your answer by providing payoff table and payoff graph to indicate the limited loss and the breakeven points. Interval of 50 points should be tabulated. Rationalize the proposed strategy.
(25 marks)

(Total: 25 marks)

Continued ...

QUESTION 4

(a) Briefly discuss spread strategy. Compare the risk of spread strategy to outright position.

(5 marks)

(b) Briefly define delta. If you wish to hedge a position equivalent to 250 EcoPi stocks and the call delta is 0.80, how many puts you need to fully hedge the position?

(5 marks)

(c) Frontken Corporation Bhd is currently selling at RM 2.80 with its exercise price of RM 2.50. It is expected that the price can move up and down by 12% over the next 2 periods. You believe that the probability of the downward movement should be 14%. The risk-free interest rate is 10%. Using multi-period binomial option pricing model:

(i) Construct the two-period binomial stock price path by depicting the first period stock price and the second period stock price.

(12 marks)

(ii) Compute a new call value holding all other factors constant.

(3 marks)

(Total: 25 marks)

End of Paper